

with more or less success. Buckminster Brown in America, William Adams, Noble Smith and others in England, have published cases in which they have been successful, not only in reducing the deformity, but in producing a permanent cure. The chief difficulty has always been the retention of the head of the bone in its normal position after reduction, and, in some of the cases so reduced, a relapse is said to have occurred. The less defective the joints, the better the prospect of success. Noble Smith recorded in the *British Medical Journal*, November 6, 1897, the case of a girl, aged six, whose left leg was affected and was two inches short in walking, but which was brought down by extension to a normal position in about three months. The patient was kept from bearing any weight on the affected limb for two years, and was then dismissed as cured. Three years later she was well, and walked perfectly, with so trifling a shortness of the limb that it was not noticeable.

Prof. Lorenz has, it seems, perfected this method of treatment. In double displacement, when the children are not more than seven years of age, and in single displacement up to the age of nine, he effects immediate reduction. He forcibly tears the contracted adductor muscles (in which operation he effects the division by manipulating and chopping the muscle with his hand), he then flexes the thigh on the body in order to stretch or tear the posterior muscles, and he extends the leg backwards in order to do the same to the anterior muscles. By these means he so loosens the joint that, by manipulation with the thigh flexed and abducted, he rotates the head of the femur into the depression of the acetabulum. He then forcibly abducts the limb in order to enlarge the anterior part of the capsule of the joint, and fixes the limb in this position. This fixation is, perhaps, the most important part of his treatment, from the demonstration of which the few English surgeons who had previously tried to follow out Dr. Lorenz's methods have learned much.

The tendency to redisplacement of the head of the femur backwards and upwards is counteracted by the extreme abduction and outward extension of the thighs.

Thus the thigh, or thighs, are held out at right angles to the body to prevent displacement upwards, and they are held more backwards than forwards to prevent displacement of the heads of the femora backwards. This position is maintained by plaster of Paris bandages encircling the pelvis and extending to just above the knees. In a few days, the child is allowed to walk in its enforced squatting position. This she—most cases are girls—can do by supporting herself with a stick held by both hands in front, or she can be seated on a stool with castors and move herself about the floor. Lorenz has found it necessary to keep up this position for six months, then to bring down the thighs to a less angular position with regard to the body, so that the child can walk more easily, while, at the same time, the heads of the femora still press inwards and help to produce stability of the joint. The whole treatment must last for two years, and this length of time has been found necessary by surgeons in the past. In older patients, Lorenz advocates preparation by continued extension and, if necessary, by division of muscles, and in all cases this preparation is helpful.

The word "bloodless" is applied to this treatment merely in comparison to the operation of opening the joint in order to replace the head of the bone. It does not indicate the slightest opposition to the use of the knife when such is desirable.

Whatever may be the view of the surgeons of general hospitals, there seems to be no doubt among the leading orthopædic surgeons, such as Mr. Robert Jones, of Liverpool, and Mr. Noble Smith and his colleagues at the City Orthopædic Hospital in London, that the treatment so ably advocated and perfected by Prof. Lorenz

is, at the present moment, the most satisfactory means known for dealing with these deformities.

The objections raised by these surgeons to the "open" method are:—(1) That it is a very severe operation and dangerous to life; (2) that the results often lead to ankylosis of the joints operated on. One stiff joint may be sustained with comparative impunity, but if two stiff joints should occur, sad, indeed, is the condition of the patient, for walking is for ever after impossible.

The accidents which Prof. Lorenz so outspokenly referred to as having happened to him in first trying his bloodless method are matters of the past, and he asserted that, with due care on the part of the surgeon, such accidents ought never to occur again.

THE EGYPTIAN MEDICAL CONGRESS.

THE increased interest which is now being taken in the diseases of warm climates was clearly shown at the medical congress held in Cairo last month. Egypt, the recognised home of epidemics in the past, is the victim of many plagues to-day which constitute it an excellent field for medical study; and the proceedings of the congress bore ample testimony to the scientific importance of the research work which is being diligently carried on in the valley of the Nile.

Out of a large mass of communications read before the meetings, we may select as worthy of special notice the papers on cholera, and the account of recent discoveries in connection with the Bilharzia and Ankylostomum parasites.

The reports on the late outbreak of cholera showed what admirable results had attended the work of the sanitary authorities. The enlightened and up-to-date methods now employed by them in combating the epidemic stand out in strong contrast to the misdirected efforts of their predecessors. Nowhere can we see more clearly the practical benefits which have been conferred on mankind by modern progress in bacteriological science. It is now uncontestedly established that cholera is spread by the infected water of the Nile and by the wells and drinking-fountains in the mosques to which the natives have common access, and the measures of the sanitary authorities are mainly directed towards preserving the purity of drinking-water as the best defence against epidemics. A general opinion now prevails, founded on the latest reports, that internal supervision and hygienic measures are of more value than quarantine regulations, which so often prove ineffective, and such measures are becoming increasingly important on account of the growth of population and crowded condition of the big towns. One great difficulty still remains—the problem of educating the natives up to the reforms which are being introduced for their benefit. Their ignorance of the elementary laws of health, combined with an innate indifference, still constitutes the main obstacle with which the authorities have to contend. At the same time, the recent epidemic would never have been dealt with so successfully if there had not been a growing enlightenment among the lower classes and a readiness to cooperate with the Government in its work of sanitary reform.

The scientific importance of Prof. Looss's papers on Bilharzia and Ankylostomum, particularly for students of tropical diseases, can hardly be overestimated. The diseases produced by these parasitic worms work the most terrible havoc among the native population of Egypt, and attempts have been made for some time past to find out by what means these parasites enter the human system and lodge in the intestine. The story of Prof. Looss's remarkable discovery is of the greatest interest. While making some experiments in the cultivation of ankylostomum worms, he accidentally allowed a drop of

water containing a number of these larvæ to rest on his hand. In a few minutes, a slight irritation set in which attracted his attention, but on examining his hand under a lens he found that the larvæ had disappeared. His conviction that they had forced their way through the skin into the subcutaneous tissues was confirmed at a later date, when he discovered that his intestine contained the ova of the parasite and that he had thus infected himself with ankylostomiasis. At the time, many persons were inclined to doubt his explanation of the occurrence, but he has since then made experiments with dogs and human beings, and in each case has been able to prove that the larvæ, entering the body by the skin, have worked their way into the intestine.

His study of the Bilharzia parasite has not yet reached the same stage of advancement, but although he cannot at present demonstrate the fact, he is convinced that the mode of infection is by the skin, as in the case of ankylostomum, and not by the mouth, as has been supposed. The negative evidence in support of this theory is that if the larvæ of Bilharzia are brought even momentarily into contact with weak solutions containing acids they are at once killed, and this fact renders it impossible for them to pass the stomach if they are taken by the mouth. Positive evidence is still wanting, owing to the great danger involved.

Prof. Looss has not felt justified in making experiments on human beings until a more perfect knowledge of the larvæ is attained, and it is difficult to find animals with a skin resembling that of human beings for the purposes of experiment. But from some partial successes he has had, he considers it only a matter of time before his contention will be established, namely, that healthy persons can become infected with bilharzia merely by dipping a hand or foot into water containing larvæ. When we consider how much of their time the natives spend in wading in the Nile and in the canals, the water of which contains these parasites, we are at last within measurable distance of accounting for the extraordinary prevalence of the disease among them.

THE VACCINATION ACTS.

THERE seems good reason to hope that the legal obligation of parents to procure the primary vaccination of their children in infancy will be extended in the ensuing session of Parliament so as to include revaccination at about twelve years of age. The widely representative and weighty deputation of the Imperial Vaccination League which interviewed the President of the Local Government Board last week made out a strong case for this and other amendments of the present law as to vaccination, and they had a most sympathetic reception from Mr. Long. He, of course, spoke only for himself, and not for the Government as a whole, but being the head of the Board which has charge of the subject, and having evidently given it most careful consideration and arrived at pretty definite conclusions as to the main points requiring attention in a new Act, there seems every reasonable prospect that these conclusions will be found embodied in a Bill and submitted to Parliament in time for enactment before the session ends. It must be recollected that the question comes up this session in any case. The Act of 1898, which introduced domiciliary vaccination and the Conscience Clause, is only a temporary measure, ceasing to have effect after the end of the present year. There is no chance of its being allowed to drop so as to cause reversion to the old system, and very little chance of its simply being included in the Expiring Laws Continuance Bill. When they are at it, therefore, it is important that Government should deal with the matter with some degree of finality. The five years' experiment has been most useful in furnishing

experience of the strong and weak points of the present law, so that the whole subject is ripe for legislative treatment. The aim should be to achieve, as nearly as possible, German results by English methods, and the chief points requiring attention are obligatory revaccination, the supply of glycerinated calf lymph, the adoption of a standard of efficiency of vaccination, and the transference of the administration of the Vaccination Acts from Boards of Guardians to public bodies better adapted for the work.

REV. DR. H. W. WATSON, F.R.S.

THE death, on January 11, of the Rev. H. W. Watson, Sc.D., F.R.S., has removed from the scientific world a worker who did much to elucidate one of the most difficult applications of mathematical reasoning to molecular science.

Henry William Watson was born in London in February, 1827, being the son of the late Thomas Watson, of the Royal Navy. At the age of nineteen, he gained the first mathematical scholarship at King's College, London, and two years later obtained a scholarship at Trinity College, Cambridge, where he graduated in 1850 as second wrangler and Smith's prizeman, Dr. Besant being senior wrangler. In 1851, he was elected fellow and assistant tutor of Trinity College, Cambridge, but on his marriage he was compelled by the then existing statutes to seek a livelihood elsewhere, and accordingly he obtained a mathematical mastership at the City of London School in 1854, and was appointed mathematical lecturer at King's College, London, in 1856 and assistant master at Harrow School in 1857. His work as a teacher ended after his appointment to the rectory of Berkeswell, near Coventry, where he resided until within a short time of his death. He was elected Fellow of the Royal Society in 1881.

A considerable proportion of Dr. Watson's published work was written with the collaboration of Mr. S. H. Burbury, F.R.S. Among these joint writings, we notice the treatise on generalised coordinates applied to the kinetics of a material system, published in 1879, the article "Molecule" in the ninth edition of the "Encyclopædia Britannica" and the treatise on the mathematical theory of electricity and magnetism, of which the first volume ("Electrostatics") appeared in 1885 and the second in 1889. The appearance of the latter volume occurred at a somewhat critical period in the history of electromagnetism. It was Dr. Watson's hope to clear up many of the obscure points in the deductive reasoning on which Maxwell's theory of electromagnetism was based. The same task had been undertaken about the same time in Germany by Hertz, who had, however, sought to substantiate the theory on experimental grounds, and his demonstrations of electric oscillations, followed up by the work of Fitzgerald and Lodge, diverted attention from the mathematical treatment of the subject. Dr. Watson, on the other hand, found in the course of the work that many points in Maxwell's theory could not be established by deductive reasoning alone, but he has given remarkably elegant treatments of many of the problems in which this difficulty does not occur.

The books written by Dr. Watson alone include a treatise on geometry in Longmans' Text-books of Science Series (1871), but his best-known work was the collection of propositions on the kinetic theory of gases, which for many years served as a text-book on this subject. While the second edition of 1894 was still in preparation, a controversy arose as to the validity of the Boltzmann-Maxwell law, and an apparent exception had been suggested in the case of a system of lop-sided spheres. Dr. Watson, by his investigation of the corresponding problem for circular